

## ABSTRACT

A chemical mechanical polishing (CMP) apparatus and method for polishing semiconductor wafers utilizes multiple wafer carriers that are transferred to different positions about a polishing pad to polish at least one semiconductor wafer while another semiconductor wafer is being loaded onto or unloaded from one of the wafer carriers. The different positions include multiple polishing positions and one or more loading/unloading positions. In some embodiments, the CMP apparatus is configured such that a semiconductor wafer is polished at a loading/unloading position. The CMP apparatus may also be configured to continuously polish one or more semiconductor wafers while the wafer carriers are being transferred to different positions. Thus, the CMP apparatus can continuously process the semiconductor wafers without significant idle periods. Consequently, in these embodiments, the efficiency of the CMP apparatus is significantly increased. Furthermore, the wafer carriers of the CMP apparatus are preferably restricted to a small area to decrease the footprint of the apparatus.